What is Infrared Light?

The infrared region of the electromagnetic spectrum is sandwiched between the microwave and visible regions and is often divided into three sub-regions: the far-IR, mid-IR, and near-IR. The far-IR (~5 - 500 cm-1), also called Terahertz radiation, has traditionally been used for rotational spectroscopy, but the emerging field has many new applications in communications, security, and imaging. The mid-IR (~500 - 4000 cm-1) can be used to study the vibrational levels of most molecules. Because every molecule has a unique infrared spectrum, mid-IR spectroscopy has become a workhorse for analytical, biological, environmental, forensic, and material science applications. The near-IR (~4000 - 14000 cm-1) covers the region of overtone vibrations and has many applications, including biological and medical imaging.